

## REMARKS

The numbering below refers to the numbers introduced by the Examiner in the Office Action.

1. The Substitute Specification was not entered because of issues of clarity. The Applicant has corrected the issues as discussed below to make the Substitute Specification acceptable.
2. The Examiner objects the corrected drawings because: the drawings must show every feature of the invention specified in the claims. The Examiner states that the figures do not identify “upper frame members 37” and the “X-configuration 38” is not depicted adequately in Fig 3a. The Applicant points out that in the amended claims neither of these elements are claimed. The Applicant has however, amended Fig. 2 A and B so as to include element 37. Fig. 4 has also been corrected in regards with this element number.

The Examiner further states that according to the Substitute Specification p.6, “holes 6 in the lower end of rear frames 34” are not identified. The Applicant has amended Fig. 3A to identify the holes.

The Examiner states further that on page 3 of the drawings, each figure must be separately labeled “Fig 3A” etc, not merely “3A”. The applicant has corrected this error.

Even further the Examiner states that, in fig 3A, element “1” is labeled with a character that appears to be a “7”. The applicant has corrected this in Fig 3A.

The Applicant submits corrected drawings as required.

3. The disclosure is objected to because of following issues:

in Claim 6, “en: is a misspelling. The applicant has canceled claim 6.

In claim 13, “holses’ is a misspelling. The applicant has canceled claim 13.

In claim 10, “front end” should be preceded with “the”. The applicant has canceled claim 10.

The following elements lack antecedent basis:

In claim 1, 13, 14,—height. The applicant has canceled claims 13 and 14. The newly amended claim 1 does not have the element ‘height’ anymore.

In claim 4, -arms. The applicant has canceled claim 4.

In claim 10 —lower frame member. The applicant has canceled claim 10.

In claim 11- middle. The applicant has canceled claim 11.

4. The Examiner rejects claims 1,4, and 6-14 under 35 U.S.C. 112 , first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The Examiner states that the original specification fails to clearly describe the invention because of omissions in “Description of the Invention” and the drawings. The Substitute specification is not entered because of the following issues as stated by the Examiner:

On page 5, lines 17-18, the ‘lower ends 34” do not appear to be pivotally secured to the rear ends 32”, of either embodiment in Figs 3 and 4. The applicant has deleted word pivotally from the new substitute specification. Also the “lower ends” should read “lower ends 34” and “rear ends 32”, respectively. The applicant has corrected this in the newly submitted substitute specification. The entire Specification has been reviewed as required and amended accordingly to include the element numbers immediately following the element names.

The Examiner states that on page 5, line 19-20, “the upper side frame members 35” are not “secured to the upper ends 36 of the rear frame members 33”, but somewhere between upper and lower ends of the rear frame members. The applicant wants to point out that the lower ends of the rear frame are defined as the part of the rear frame member where there are holes (see new substitute specification page 7 line 4-6 (clean version on page 6, lines 13-15) and previous version of claim 1). Therefore the upper end is meant to be the part without holes and therefore the upper side frame members are secured to the upper ends 36 of the rear frame members 33; i.e. to the part without holes.

5. Claims 1,4 and 6-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out the distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the “forwardly extending upper side members” do not appear coupled to the “upper ends of the rear frame members” The applicant want to point out that the lower

ends of the rear frame members are defined as the part of the rear frame member where there are holes. (See new substitute specification page 7 lines 4-6 and previous version of claim 1). Therefore the upper end is meant to be the part without holes and therefore the upper side frame members are secured to the upper ends of the rear frame members; i.e. to the part without holes. However, the applicant has canceled this language from the amended claim 1.

In the paragraph reciting the “tow bar attachment”, line 2 recites “a pin-coupling system”, while line 4 recites “said tow bar having a coupling system in both its ends” rendering this portion of the claim unclear. The applicant has amended the claim 1 as to make it clear in this respect.

In claim 1 and 6 the language beginning with “such as” is infinite because it is unclear if the “motorized wheelchair” and “golf car” are included with the invention. In order to clarify this the applicant has amended the claim with “in combination with” in the preamble of claim 1 as proposed by the examiner during the interview on August 27<sup>th</sup> 2004. The applicant has canceled claim 6.

In claim 6, “style devise” is indefinite. The applicant has canceled claim 6.

6. Claims 1, 4, 6-8 and 12-14 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Lockard et al 4989890 in view of Kurschat 5064209. The Examiner states that Lockard, as best understood, discloses a companion rider wheelchair comprising two

lower side members 24 having front 22, and rear 24 ends, the rear end having holes for adjusting rear wheel F, two rear members 26/142, the lower end 26 having holes for the rear wheel, and the upper end mechanically coupled to forwardly extending upper side member 14/18. The latter supporting seat C, second set of forwardly extending upper frame member 270 constituting arms, the rear wheels F mountable to any of the abovementioned holes, and two caster assemblies E including holes for the caster wheels, wherein the wheelchair is collapsible and coupled to a motorized vehicle.

The Applicant wants to point out that there is absolutely no advice in Lockard to couple the wheelchair to a motorized vehicle.

The Examiner states further that Lockard does not disclose a tow bar attachment for the wheelchair, while Kurschat show this configuration including tow bar 48 having a quick-release, pin-coupling system at both ends, wherein the attachment is coupled to motorized wheelchair 12, and, the tow bar may be permanently fixed to the lower frame member.

The Examiner states that it would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration , as shown in Kurschat, so that the wheelchair may be transported/towed by another vehicle, thus the wheelchair user may enjoy a journey without effort

As discussed during the interview with the Examiner on August 27<sup>th</sup> 2004, the applicant has amended the claim 1 by narrowing it to include the wheels of the wheelchair to have

a diameter of 20-26 inches. This is supported by the original specification disclosing that the wheel chair may be a standard wheelchair and that the wheelchair is aimed to be used alone as well as in this combination. Furthermore, the original figures show wheel chair with wheels substantially of the claimed size. Kurschat invention needs inherently a wheelchair with small wheels, because the tow bar is attached into the axis between the wheels. One aspect of the invention of the applicant is to use a wheelchair that can be used alone. The attachment of the tow bar according to the Kurschat invention requires a wheelchair with small wheels. Such a small wheeled wheelchair cannot be used alone by a disabled person; while the wheelchair used in combination according to the present invention can be used alone by the disabled person as the wheels are of size that allows the person to manually roll the wheels. The size of the wheels is possible due to the inventive step of having the tow bar attachment secured to the front end of the lower side member frames and due to the configuration of the tow bar.

Further more, according to the discussion lines during the interview, the applicant has amended the independent claim 1 so as to include the curved tow bar, forming a rest for the legs. Such a curved tow bar is not disclosed by either of the prior art patents.

Moreover, as it was shown during the interview, the attachment mechanism of the tow bar according to the present invention allows turning around with the device in a small space; while the construction of the Kurschat device is inherently rigid and not capable of turning in a small space.

The applicant believes that claim 1 as amended now overcomes this rejection. Claims 4, 6- 7, 10 and 12-14 are canceled.

B. Claim 9 is rejected under as being unpatentable over Lockard in view of Kurschat, and further in view of Radjenovic. The applicant has canceled claim 9.

C. Claim 11 is rejected as being unpatentable over Lockard in view of Kurschat and further in view of Hawes et al 3937489. The applicant has canceled claim 11. The applicant has however added the limitation of a curved tow bar into claim 1. The Examiner states that the previous references do not disclose the tow bar as being curved to form a footrest, while Hawes tow bar 16 shows this configuration. The examiner states that it would have been obvious to one with ordinary skill in the art at the time the invention was made to include this feature, as shown in Hawes, to provide increased comfort and enjoyment for the wheelchair rider while being transported. The applicant wants to point out that the curved tow bar according to Hawes is curved only at one end where it is attached to the motorized vehicle. This is purely because of the form of the box towed and Hawes could not have curved the towing bar from the other end as is required according to the present invention. In the present invention the tow bar is curved upwards from both of its ends. This is because the first end attached to the wheelchair is attached to the tow bar attachment which situates right under the seat of the wheel chair thereby enabling use of bigger wheels (as opposed to the small wheels of Kurschat where the tow bar is attached to the axis of the wheels). Secondly, the curving of the tow bar from both of its ends allows construction of a broader part in the middle of the tow bar

for foot rest purposes. The applicant believes that the claim 1 as amended now is clearly different from the prior art.

The prior art made of record, and not relied upon, is pertinent to the applicants disclosure: Couture 5842710, Hayes et al 5788255, Milligan 5269548. the applicant has reviewed this prior art and believes that claim 1 as it now reads is different from this prior art.

#### CONCLUSIONS

By virtue of the amendments and the above remarks, this application is deemed patentable over the cited art. Applicant respectfully requests that the Examiner reconsider and withdraw her rejections and allow this application to pass to issue. Alternatively, the applicant requests that this amendment be entered for the purpose of appeal.

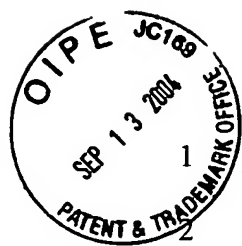
Yours truly,

A handwritten signature in black ink, appearing to read "John Dodds", written in a cursive style.

John Dodds

Reg No. 44553





## SUBSTITUTE SPECIFICATION

Patent Application of

**Marvin Byrd**

For

**TITLE: COMPANION RIDER WHEEL CHAIR**

### **BACKGROUND & CROSS REFERENCES TO RELATED APPLICATIONS**

This application is entitled to benefit of Provisional Patent Application Serial Number 60/263,496 filed on January 23, 2001.

### **~~BACKGROUND:~~ FEDERALLY SPONSORED RESEARCH**

The invention that is the subject matter of the present application was not a recipient of any federal support for its research and development.

### **REFERENCE TO MICROFICHE APPLICATION**

Not applicable

### **BACKGROUND OF THE INVENTION: ~~FIELD OF INVENTION~~**

This invention relates to the field of wheel chair devices that are used by the physically challenged for movement and convenience.

1       ~~Most prior wheelchairs are custom made to fit a particular individual, with height~~  
2       ~~and width dimensioned to suit the physical configuration of the expected user of the~~  
3       ~~wheelchair. It is also noted that the wheelchairs that have been previously proposed have~~  
4       ~~been relatively heavy and bulky, and do not lend themselves to collapsing to an easy~~  
5       ~~storage configuration. While motorized wheel chair devises do exist, no previous art~~  
6       ~~describes the use of a coupling devise to allow a standard wheelchair to be coupled to a~~  
7       ~~motorized devise.~~

## 8 9       ~~**BACKGROUND: DISCUSSION OF PRIOR ART**~~

10       Most wheelchairs that are found in the market are custom made to fit a particular  
11       person, with specific height and width dimensioned to suit the physical configuration of  
12       the future user of the wheelchair. Furthermore, wheelchairs found in the prior art are  
13       relatively bulky and heavy and are not easy to store because of their complicated  
14       configuration, such as the cooperative escalator and wheel chair of Patent No. 4,326,622  
15       (Ellzey, 1982). With respect to wheelchairs with seats are divided, Patent No. 5,405,187  
16       (Söderlund, 1995) describes a wheelchair where the seat is divided longitudinally. With  
17       respect to motorized wheelchair devices, they are present in the prior art, such as the  
18       motorized invalid chair transport vehicle claimed in Patent No. D320,579 (Manning et al,  
19       1991), and in the universal electric wheeled chair described in Patent No. 4,941,540  
20       (Bernstein, 1990). Nevertheless, no prior art neither of lighter wheelchairs -such as the  
21       universal wheeled chair claimed in Patent 4,825,971 (Bernstein, 1989)- or of motorized  
22       wheelchair describe the use of a coupling devise to allow a standard wheelchair to be  
23       coupled to a motorized devise.

1 With respect to devices to hold the two members together when used as  
2 companion rider wheelchair, there are locks in the prior art such as the self locking, rattle  
3 resistant fork bolt described in Patent No. 6,022,166 (Rogers et al, 2000), but do not  
4 claim nor disclose the system used in the present invention.

## 5 6 **BRIEF SUMMARY OF THE INVENTION**

7 This invention constitutes a lightweight wheeled chair forming a companion rider  
8 device is-formed of hollow tubular frame members. The seat is preferably cantilevered  
9 from rear frame members. The frame includes two lower side frame members having  
10 back-wheels mounted at the rear ends and smaller castor wheels mountable to the fron  
11 end each of which has relatively small wheels mounted at both ends. In one embodiment  
12 ~~T~~the front end of the two lower side members are coupled together using two coupling  
13 frame members inter-coupling the upper side and lower side two frame members to  
14 permit adjustment and collapsing of the wheeled chair. Two upper side members extend  
15 forwardly from the rear of the wheeled chair, and are secured to the rear frame members.  
16 A seat may be supported directly on these two upper side frame members, or the two  
17 upper side frame members may serve as arms for the wheeled chair, with the seat being  
18 slung from these arms at a lower position. The present invention is to provide a  
19 lightweight wheelchair that can be used as a standalone wheelchair, as well as for a  
20 recreational use coupled to a motorized vehicle.

## 21 **OBJECTS & ADVANTAGES**

22 Advantages of the new wheelchair include the fact that it is very lightweight, with  
23 the estimate of its weight being approximately 18 pounds. An additional advantage, of

1 course, is the fact that it may be readily adjusted in height, from kitchen counter-top level  
2 to a much lower desk height level. The unit can be constructed to be foldable so that it  
3 may easily fit into the back seat or trunk of a car.

4  
5 ~~Other objects, features and advantages will become apparent from a consideration~~  
6 ~~of the following detailed description and from the accompanying drawings and the claims~~  
7 ~~of the invention.~~

8 In view of the foregoing, various objects of the present invention include the following:

9  
10 1. One object of the present invention is to provide a lightweight wheelchair that can be  
11 used as a standalone wheelchair, as well as for a recreational use coupled to a motorized  
12 vehicle, such as a motorized wheel chair.

13 2. Another object of the present invention is to provide a wheelchair in which the width  
14 of the wheelchair between the side arms may be readily varied, and wherein the height of  
15 the seat of the wheelchair may be easily changed.

#### 16 17 BRIEF DESCRIPTION OF THE DRAWINGS

18  
19 The invention will be more clearly understood after reference to the following detailed  
20 description of the preferred embodiment read in conjunction with the drawings, wherein:

21  
22 Fig. 1. is a photograph side elevation view of a wheelchair illustrating an early  
23 embodiment of the present invention.

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Fig. 2 A Illustrates a perspective view of the adjustable wheel chair with the towing bar device attached to it.

Fig. 2 B Illustrates a perspective view of the adjustable wheel chair with the castor wheel assemblies attached to it.

Fig. 3 is a sectional view of the adjustable companion rider wheel chair frame and the attachable towing device.

Fig. 3A illustrates the adjustable chair frame and the towing bar attachment.

Fig. 3B illustrates the coupling system of the motorized vehicle for pin coupling of the tow bar.

Fig. 3C illustrates the towing bar.

Fig. 3D illustrates the castors.

Fig. 4. illustrates an alternative embodiment of the wheelchair frame.

Fig. 5. is a photograph of the invention reduced to practice.

## 1 DETAILED DESCRIPTION OF THE INVENTION

2  
3 In accordance with one aspect of the present invention, a lightweight companion  
4 rider wheel chair, a frame having two lower side frame members 30, with wheels 42  
5 mounted at front end 31 and at rear end 32~~both ends thereof~~, and two rear frame members  
6 33~~pivotally connected together intermediate their ends to form an "X" configuration,~~  
7 with the lower ends34 of each of the rear frame members 334 being ~~pivotally~~ secured to  
8 the rear ends32 of the lower side frame members 302. In addition, two forwardly  
9 extending upper side members 35 are provided, with these upper side frame members 35  
10 being mechanically secured to the upper ends 36 of the two rear frame members 33. With  
11 regard to the arms and seat of the wheeled chair, they may be arranged in one of two  
12 alternative ways. As one alternative, the forwardly extending upper side members 35 may  
13 be the wheelchair arms, and the seat may be supported by a sling from these arms. As  
14 another alternative, ~~another two~~ sets of forwardly extending upper frame members 37 may  
15 be provided, with ~~this set of upper pair~~ constituting the arms of the wheeled chair, and the  
16 ~~lower pair of forwardly extending upper side frame members~~ 35 constituting the support  
17 for the seat. (See Figures 2 A, B and 4 5). ~~One~~As an important feature of the invention, is  
18 that arrangements may are be provided for changing the spacing of the side members,  
19 thereby causing the "X" configuration 38~~rear frame members~~ to pivot about their central  
20 pivot point and have the arms of the wheelchair come closer or farther apart, and  
21 correspondingly raise and lower the height of the seat. ~~(See Figure 4) Further, when the~~  
22 ~~side members are spread apart to their fullest separation, the rear frame members are very~~  
23 ~~nearly parallel and horizontal, for ease in storage.~~

1 The height of the chair can be adjusted by adjusting the attachment of the castor wheels  
2 40 and the rear wheels 42. The castors 39 are attachable to the front end 31 of the lower  
3 side frame 30 with a coupling mechanism 4, 5. The castor wheels 40 can be attached in  
4 any of the several holes 8 provided in the castor wheel attachment 41. The rear wheels 42  
5 can be attached into any of the several holes 6 provided in the lower end 34 of the rear  
6 frames 33.

7  
8 The rear wheels 42 can furthermore be adjusted depending of the weight of the person  
9 sitting in the chair by attaching the back wheels 42, into any of the several holes 7  
10 provided in the rear end 32 of the lower side frames 30.

11  
12 In order to use the wheel chair as a companion rider, the castor assemblies 39 are  
13 removed and instead a tow bar attachment 1 is attached in the front ends 31 of the lower  
14 side frames 30. Alternatively, the tow bar attachment is permanently fixed to the front  
15 ends of the lower side frames 30 (see Fig. 4). The rear end 45 of a tow bar 2 is attached to  
16 the tow bar attachment 1 with a pin-coupling coupler 46. The tow bar 2 is curved  
17 downwardly and the lowest part of the bar forms a rest for the feet 43. The front end  
18 44 of the tow bar 2 is coupled to a coupling mechanism 3 in the motorized vehicle with  
19 another pin-coupling coupler 47.

20  
21 Other features of the invention may involve one or more of the following:

22  
23 1. The front ends 31 of the lower side members 30 may be coupled together with a

1 combination of frame members and linear bearings, to maintain alignment of the lower  
2 side frame members.

3 ~~2. In accordance with another aspect of the invention, the rear frame members are the~~  
4 ~~only structural members inter-coupling the seat and the arms with the lower side frame~~  
5 ~~members, so that the seat is cantilevered from the rear to provide a resilient torsion bar-~~  
6 ~~type suspension for comfortable support of the user of the wheeled chair.~~

7  
8 ~~3. A T-bar device allows the folding model to be armed and disarmed in a quick and~~  
9 ~~simple manner as part of the folding component of the collapsible model.~~

10 42. Advantages of the new wheelchair include the fact that it is very lightweight, with  
11 the estimate of its weight being approximately 18 pounds.

12 53. An additional advantage, of course, is the fact that it may be readily adjusted in  
13 height, from kitchen counter-top level to a much lower desk height level. The unit may be  
14 collapsible so that it may easily fit into the back seat or trunk of a car.

15 ~~Other objects, features and advantages will become apparent from a consideration of the~~  
16 ~~following detailed description and from the accompanying drawings~~

## 17 18 **DESCRIPTION OF DRAWINGS**

19 Having thus described the invention in general terms, reference will now be to the  
20 accompanying drawings in which:



FIG. 1 is a photograph side elevation view of a wheelchair illustrating an early embodiment of the present invention;

FIG. 2 is a diagrammatic presentation of wheelchair in Figure 1

FIG. 3 is a composite diagram of the coupling mechanism forming part of the wheelchair:

#1 Tow Bar attachment for tow bar coupling, #2 Tow bar, #3 Coupling mechanism to couple tow bar to motorized vehicle, #4 Coupling for right castor, #5 coupling for left castor.

FIG. 4 is a composite diagram of the height/weight adjustment mechanism: #6

wheelchair height adjusters (left and right sides) #8 Castor height adjusters (left and right sides)

FIG. 5 is a diagram of seat folding mechanism and armrest couplings: #9 a fragment

drawing of the back of the armrest (left and right sides) #10 a fragment drawing of front

armrest (left and right sides) #11 drawing coupling for rear armrest (right and left sides)

#12 drawing of combination of seat rest, and armrest couplings (left and right sides) #13

Rear seat rest couplings (right and left sides) #14 top of T-Bar / X-Bar for seat (left and

right sides) #15 Upper wheelchair frame connection. #16 U-clamp, to clamp the T-Bar /

X-Bar to the upper side frame of wheelchair. #17 arm to connect X-Bar to upper

chair frame. #18 U-clamp to connect the lower wheelchair frame to the bottom of the T-

Bar/W-Bar. #19 Bottom of T-Bar connection. #20 Lower wheelchair frame, connects to

1 ~~the bottom of the T Bar. #21 Seat sling / X Frame, in open position.~~

3 ~~FIG. 6 is a photograph of the invention reduced to practice.~~

#### 6 ~~OPERATION OF INVENTION~~

7 The invention is operated by coupling the wheelchair device to a motorized  
8 vehicle such as an electric wheelchair or golf cart by means of the pin-coupling device.  
9 The rider then can be pulled along for recreational purposes by the motorized vehicle.

#### 11 ~~DESCRIPTION AND OPERATION OF ALTERNATIVE EMBODIMENTS~~

12 The invention can be used as a standalone wheelchair, or as a coupled device to a  
13 motorized devise. The wheelchair invention described here is also available as a  
14 collapsible device so it can be stored and carried easily and conveniently, such as in the  
15 trunk of a car. The alternative embodiments described here are examples only; the scope  
16 of the invention shall be as described within the claims of the invention.

#### 18 ~~CONCLUSION, RAMIFICATION & SCOPE OF INVENTION~~

19 This device offers a unique device for transport and recreation of those persons  
20 requiring the use of a wheelchair for movement. It improves the quality of life of the  
21 physically challenged and allows for more mobility in the community at large. The scope  
22 of the invention described here is for example only. The scope of the invention shall be  
23 determined as described within the claims of the invention.

1

2 **LIST OF REFERENCE NUMERALS**

3 ~~———— Not applicable.~~

1 SEQUENCE LISTING

2

3 Not applicable

## 1   **ABSTRACT**

2           This invention constitutes a lightweight wheeled chair forming a companion rider  
3   device is formed of hollow tubular frame members. A tow bar can be attached to the tow  
4   bar attachment with a pin coupling assembly. The tow bar attachment is mountable to the  
5   front ends of the lower side frame of the chair or it may also be permanently fixed there.  
6   The tow bar is downwardly curved from its middle and it has a feet rest. The height of  
7   the wheelchair may be adjusted by mounting the back wheels and the castor wheels in  
8   different adjusting holes provided in the chair frames and in castor wheel attachment.  
9   ~~The seat is preferably cantilevered from rear frame members. The frame includes two~~  
10   ~~lower side frame members, each of which has bug wheels on the back. The front of the~~  
11   ~~two lower side members are coupled together using two frame members inter-coupling~~  
12   ~~the two frame members to permit adjustment and collapsing of the wheeled chair. Two~~  
13   ~~upper side members extend forwardly from the rear of the wheeled chair, and are secured~~  
14   ~~to the rear frame members. A seat may be supported directly on these two upper side~~  
15   ~~frame members, or the two upper side frame members may serve as arms for the wheeled~~  
16   ~~chair, with the seat being slung from these arms at a lower position. The present~~  
17   invention is to provide a lightweight wheelchair that can be used as a standalone  
18   wheelchair, as well as for a recreational use coupled to a motorized vehicle, such as an  
19   electric wheelchair.

1 ~~PETITION TO MAKE SPECIAL~~

2       ~~This petition should be given special status because of the search of prior art and~~

3 ~~the value that this invention provides in terms of health and safety.~~